KAZA ANIMAL HEALTH

Sample sharing, Diagnostics and Communications

Utility of a KAZA-focused Laboratory (Brief Update)

Chris Foggin and Jessica Dawson

VFWT Concluding remarks from the AHSWG Meeting in August 2018

There is a **need for rapid disease diagnosis** and surveillance throughout KAZA. This includes forensic samples

There is a often a **lack of coverage by veterinary personnel**, as well as wildlife and law-enforcement personnel, who usually have little knowledge about animal diseases

Central Government Laboratory facilities are far away (in the capital cities)

Non-government Laboratories within KAZA can assist in training and diagnosis, with appropriate oversight from Competent Authorities of KAZA countries

Victoria Falls Wildlife Trust Laboratory is established within KAZA and is willing to become a KAZA Animal Disease Laboratory

Acceptance by KAZA Veterinary Authorities of such Labs, and also **permitting cross-border transfer of samples**, would be a big 'step in the right direction'.

Priority Animal Health Issues identified at the August 2018 AHS-WG Meeting

Some 50 (34) 'Strategic Activities' fall under 6 basic Headings

1. **Animal production systems and marketing within disease control zones**
2. **Disease surveillance (esp. for economic impact & 'immediate concern' diseases)**
3. **Disease Risk Assessment (analysis for control options)**
4. **Diagnostics (capacity, forensics, analysis & reporting, sample transfer)**
5. **Communications (platforms for data sharing and planning)**
6. **Disease Management**
   - **fence rationalization**
   - **other controls – regulations, vaccinations, movement controls**

Any KAZA Laboratory could have a direct role in 2 to 5

Priorities from Aug 2018 : potential KAZA Lab role

1. Disease Surveillance

Involves active surveillance for FMD (topotypes), BTB, CBPP, as well as passive surveillance

Possible Role of KAZA Lab:

- Promote / facilitate more vigorous passive surveillance
- Train field officers to recognize, report & sample
- Partake in planning & coordination of field surveillance operations
- Provide active assistance in field activities
- Provide sample kits / materials
- Store duplicate samples

Priorities from Aug 2018 : potential KAZA Lab role

2. Disease Risk Assessment

Develop research priorities, analyse results to assess risk

Possible Role of KAZA Lab:

- Provide a base for any dedicated KAZA Epidemiologist
- Thereafter provide input into most research, surveillance and risk assessment activities:
  - assess capacity
  - determine risk areas and gaps
  - identify priority research projects
  - 'service' research (eg FMD maintenance in cattle)
  - other epidemiological services, eg GIS and reporting

Priorities from Aug 2018 : potential KAZA Lab role

3. Diagnostic Capacity Assessment and general Diagnosis

Assessment of present capacity, identification of gaps, and improvement diagnostic capacity while using present capacity

Possible Role of KAZA Lab:

- Assist in the above processes
- Improve capacity if / when resources available
- Develop SOPs for dealing with seized samples
- Sample analysis, where technically feasible within KAZA, includes diagnosis on *ad hoc* samples of passive surveillance
- Work towards official accreditation

Priorities from Aug 2018 : potential KAZA Lab role

4. Diseases of Immediate Concern (when rapid diagnosis and response is required)

Anthrax, Rabies, Poisoning, other Zoonoses (other TADs)

Possible Role of KAZA Lab:

- Provide rapid diagnosis and reporting
- Train field personnel in recognition and sampling
- Provide sample kits

Priorities from Aug 2018 : potential KAZA Lab role

5. Forensics

Species ID, Geographic origin determination, toxin analysis

Possible Role of KAZA Lab:

- DNA extraction, PCR and sequencing for species & (geographic) ID
- Develop genetic database
- Biobank samples
- Provision of sampling kits
- Identification of toxins and / or transfer to analytical Labs in region (possibly with prior extraction)

Priorities from Aug 2018 : potential KAZA Lab role

6. Transfer of samples

Moving samples between countries for the most efficient processing

Possible Role of KAZA Lab:

- Assist development of KAZA protocol / SOPs (w.r.t. CITES & national requirements)
- Identify / promote use of efficient transport agencies
- Distribute of samples to specialist Labs elsewhere
- Provide of sample packaging

Priorities from Aug 2018 : potential KAZA Lab role

7. Communications

Dissemination of important disease information to relevant (veterinary and other) personnel across the KAZA landscape

Possible Role of KAZA Lab:

- Help set up communications network
- Receive and transmit reports of immediate concern
- Provide regular (brief) general situation reports
- GIS and database facility (Epidemiologist function)
- Assist with KAZA veterinary meetings

Additional Points

Forensics

Significant numbers of animals, especially rhino, have been translocated in KAZA, usually from outside KAZA. This may complicate geographic identification of forensic samples

International exports of wildlife from KAZA

The international zoo fraternity is concerned about 're-emerging' disease implications in their collections; for example Endotheliotropic Elephant Herpes virus; Papilloma virus; Bovine TB

New challenges

Increasing difficulty in moving diagnostic samples internationally, especially to ARC Onderstepoort (in addition to national restrictions);

KAZA Protocol, and diagnosis within KAZA could overcome this and decrease 'turn-around' time

Summary of possible advantages of KAZA-based Lab(s)

Diagnosis / Forensics / Surveillance & Risk Assessment:

- Provide rapid diagnosis and reporting
- Provide specialist forensic services
- Conduit for KAZA samples to external Labs
- Assist work on KAZA-specific disease research and surveillance
- Bank KAZA-specific samples including genetic samples
- Hold disease database
- House Epidemiologist and therefore provide epidemiological services

Communications, Training and Administrative matters:

- Hub for KAZA AHSWG communications
- Provide admin assistance to AHSWG
- Train field workers (basic disease recognition, sampling + crime scene response)

Conclusion

The long list of priority Strategic Activities hasn't made much progress to date. Resources for these will be an issue.

Maybe we should start with a few 'baby steps'

- Set up a basic communication platform and start communicating
- Anthrax, rabies and poisoning remain problems of immediate concern; let's communicate about where these are occurring and how (if ?) individual countries are dealing with them
- Other disease issues can similarly be notified within KAZA veterinary fraternity
- Determine our major gaps in diagnostic capacity and see how / if these can best be overcome
- Implement a user-friendly protocol for transfer of samples between countries' Labs.

There should be some Trust in our collective professional integrity to do the 'right thing' !

The End